WHAT IS CLAIMED IS:

1. A continuous process for the preparation of a thermoplastic polyurethane elastomer at a temperature of 130 to 250°C comprising reacting:

A) at least one polyether diol having a number average molecular weight (M_n) of 450 to 10,000 and, on average, 1.8 to 2.2 Zerewitinoff active hydrogen atoms; with

B) at least one organic diisocyanate; and

C) 1,4-di-(2,2'-hydroxyethyl)-hydroquinone,

in the presence of 10 to 1000 ppm in relation to A) of tin dioctoate as a catalyst

with the proviso that the NCO/OH ratio of the reactants A), B) and C) is 0.85 to 1.2, said thermoplastic polyurethane having a glass transition temperature (T_g) below 50°C.

2. The process of Claim 1 wherein the preparation takes place in an extruder.

3. The process of Claim 1 wherein the preparation is carried out in a prepolymer process.

4. The process of Claim 2 wherein the preparation is carried out in a prepolymer process.

5. The polyurethane elastomer prepared in accordance with the process of Claim 1.

6. The polyurethane elastomer of Claim 5 further containing at least one member selected from the group consisting of auxiliary substances and accessory agents.